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P A P E R S

I N

A G R I C U L T U R E.

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## AGRICULTURE.

**T**HE GOLD MEDAL was this Session presented to JOHN HUNTER, Esq. of Gubbins, in Hertfordshire, for having planted 40,000 OAKS. The following Accounts and Certificates were received from him.

S I R,

**I** PASS so much of my time in the country, and allow myself so little of it for unavoidable occupations in London, that I seldom find leisure to attend at the Society for the Encouragement of Arts, &c. I shall therefore be obliged to you, if you will inform the Society, at any convenient opportunity, that, in the months of November and December last, I planted nearly forty thousand Oaks of the growth of three years, upon  
a field

a field on my estate, not more than fifteen miles from town, after having made it a most capital fallow, and secured the plants with a mound of earth round each; and, in short, fenced and otherwise secured it from all depredations, in the most safe and secure manner, for the good of posterity. The field contains twenty-seven acres. If the Society should think a work of this sort worthy of any honorary gratuity, I shall be happy to receive it.

I am, SIR,

Your obedient Servant,

JOHN HUNTER.

*Gubbins, Herts,*  
11th Feb. 1800.

To the SECRETARY.

THIS

**T**HIS is to certify, that John Hunter, Esq. of Gubbins, in the parish of North Mims, in the county of Herts, did, in the autumn of the year 1799, set out and plant twenty-seven acres of land, part of his estate situated at Gubbins as aforesaid, with 40,000 Oak-Plants, all of which were of the growth of from two to three years previous to their being so planted; and that the method pursued in planting the same was by a good summer-fallow being given to the land; and the same is well fenced.

It is also further certified, that the said plantation was, and continues to be, well and sufficiently fenced and defended from the depredations of cattle, or any thing else that can tend to injure or destroy the same; and that the plants are at present in a healthy and thriving state.

G. STAINFORTH.

*Dec. 1, 1801.*

The

The SILVER MEDAL of the Society was this Session voted to the Reverend RICHARD YATES, F. A. S. Chaplain to His Majesty's Royal Hospital at Chelsea, for the following OBSERVATIONS on the CULTIVATION and GROWTH of OAK TIMBER.

S I R,

TO expatiate upon the vast importance of increasing the growth of Oak-Timber, seems unnecessary. The national advantages resulting from this source appear to be in general well understood ; and yet the cultivation and management of this most useful plant has not hitherto obtained that degree of attention which it most certainly merits.

Entirely to obviate, or even in some measure to remove or lessen, the obstacles that still continue to impede the planting of Oaks, would therefore be rendering an essential service to the nation,

tion. The desire of accomplishing so beneficial a purpose, has induced the judicious and public-spirited Conductors of the Society of Arts to propose a Premium for “ascertaining the best method” of raising Oaks ;—in consequence of which, this Paper is submitted to their candid consideration. And as the statements here made are founded upon a sedulous and active experience of fifty years, it is presumed the *spirit* and *meaning* of the Society’s proposal may have been observed, although it has not been possible (in this instance) *literally* to fulfil its terms ; at least, the very intention of promoting and forwarding the views of so enlightened and highly useful a Society, may, it is hoped, be accepted as an apology for calling their attention to these observations.

It forms no part of the present design to enter minutely into the various causes that continue to operate in obstructing the cultivation of Oak ; as there is one

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of

of peculiar magnitude, the consequences of which are highly detrimental and injurious, and which it is therefore the principal object of this Paper to remove.

An opinion is generally prevalent, that the Oak is particularly slow in its growth, and requires a great number of years before it affords any advantage. This idea too often deters from planting, on account of the very great length of time it is supposed the land must be occupied before any return of valuable produce can be obtained from it, after a considerable expense may have been incurred in forming plantations.

This opinion I consider as entirely founded in error, and to have taken its rise in a great measure from the want of proper management that has hitherto commonly prevailed in the raising of Oaks: and in this Paper I shall endeavour strongly to state, that the Oak may be rendered very rapid in its growth, and that consequently land may be employed



ployed to great advantage in its cultivation, as a very considerable and profitable produce may, in a much shorter time than is generally supposed, be derived from proper parts of an estate thus employed.

Oak-Timber in this country, for the most part, appears in trees of a considerable extent of head, but seldom more than *twenty* or *thirty* feet in stem; and this, in many instances, the growth of a century. Now, by the course of management here proposed, it is conceived that trees, of at least *double this magnitude*, may be obtained in about half that time.

It is not my intention to attempt a proof of this proposition by theoretical deductions, but to appeal for its confirmation to the indubitable test of fact, which, from the event of repeated trials, impresses a conviction, that experience will be found to support and establish it in the most unequivocal manner.

It would be easy to enlarge much on the various qualities of soil, the nature and process of vegetation, and the peculiar properties of the Oak ; but as these topics may be found amply and judiciously discussed in many other authors, who have expressly treated on these subjects, I shall decline all such speculations ; and, with the hope of being more essentially useful, shall confine myself to a statement as simple and practical as possible.

The Oak, in the progress of its growth, spreads numerous roots near the surface of the ground, and in an horizontal direction : these assist in supporting and preserving the tree in its position, but seem to contribute very little to its increase and magnitude. The Oak appears to derive its chief nutriment and strength from a root that always descends at right angles to the horizon, and is called the tap-root. The first thing, therefore, to be observed is, that upon a judicious  
attention.

attention to this peculiarity, the planter's success principally depends; and the neglect of this care is the constant source of error and disappointment. In all climates, and upon all soils, to preserve this tap-root from injury, and as much as possible to assist its growth, is a general, and indeed the most essential principle in the cultivation of Oak. With a due regard to this circumstance, the management of a plantation may be resolved into the three following practical directions :

*Previously* to planting the acorns, *loosen* the earth intended for their reception, by *deep trenching*.

*Never transplant*, or in any way disturb, the saplings intended for timber.

Keep the plant carefully *pruned*, till arrived at a proper height.

More fully to elucidate the subject, and to prevent the possibility of misapprehension, it may be proper to give a more detailed statement.

In determining on a spot to form a plantation of Oaks for timber, it must always be recollected that the plants are to remain without removal in their first situation : the clearing and fencing may then be attended to as usual ; and in the course of the winter, from September to March, the particular spots intended for the reception of acorns, may be prepared for that purpose, by digging a trench about three feet in width, and from three to six feet in depth, according to the closeness and tenacity of the soil. If grass-ground, the first spit should be placed at the bottom of the trench ; and if more than one trench be necessary, they should be prepared in the same manner, preserving a distance of ten yards between each, if it be intended to employ the intermediate space in under-wood, or for any other purpose.

Having made a careful selection of acorns that are perfectly sound, and in good preservation, they are to be planted  
about

about the middle of March. Draw a drill in the centre of the trench; two inches in depth, if the soil be heavy and loamy; but three inches in a light and sandy earth. In this place the acorns two inches asunder, and cover them carefully with mould. When the plants appear, they must be weeded by hand in the rows, and the earth of the trench round them cleaned with a hoe, once a month during the summer. In October inspect the rows, and thin them by pulling up every other plant: attention will of course be paid to remove the weak and crooked plants, and leave those that are tallest and straitest. On the second year, the operation of thinning must be repeated, at the same time, and in the same manner; and, should any of the remaining plants have made side-shoots stronger than the general character, they must be smoothly cut off with a sharp knife, close to the leading stem. On the third year, the thinning is again to be

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repeated,

repeated, and the general pruning commenced, by cutting off close to the leading stem all the side-shoots of the first year; thus leaving the branches of two years to form the head of the following year. The removal of every alternate plant must be continued yearly, till the trees are about thirty feet apart, at which distance they may remain for timber. The pruning is to be continued, by removing every year, very smooth and close to the main stem, one year's growth of side branches, till the plants are arrived at a stem of forty, fifty, or sixty feet, and they may then be permitted to run to head without further pruning.

The particular arrangement here recommended may be varied according to any peculiarities of situation, regard being constantly had to the general and most important principle of loosening the ground *very deep* previously to planting the acorns. By this mode of culture, Oaks may be raised in almost any soil; but,

but, where it is possible, a loam or marl is always to be chosen. Oaks thrive much the best in such earth ; and, when assisted by *deep trenching* and *judicious pruning*, attain in a few years to an immense size,

Those who have been accustomed to notice the slow growth and stunted appearance of Oak Trees, when denied the assistance of art, and left to themselves in the common way, would observe with astonishment the vigorous and rapid increase of plants under the management now pointed out.

The plants thinned out the first three or four years, though not fit to be depended upon for timber, as transplanting generally injures very materially the future growth, may be replanted in the intermediate spaces between the rows, for the purpose of being afterwards removed ; or they may be usefully placed in hedges, or other spare and unoccupied spots of ground. They should be headed down at the time of transplanting, as  
this

this operation assists the process of nature, in reproducing or remedying any injury the tap-root may have received from the removal: and, if proper attention be given to loosening the soil for their reception, and pruning them as they advance, in most instances an adequate profit will be derived from the labour bestowed upon them. After a few years, the produce of the timber-plantation will be found very advantageous. The young trees that are to be removed yearly, will always find a ready market for a variety of purposes, unnecessary here to enumerate. In addition to these advantages, if by this treatment of *deep trenching* previous to planting, and *annual careful pruning* during the growth, timber can be produced in about fifty years, of equal quality, and much superior in size, to that which has been above one hundred years growing under improper management, or without the assistance of cultivation ;  
it



it will doubtless be allowed that a most beneficial, if not absolutely the best possible method of "raising Oaks," is here pointed out and ascertained.

This method of cultivation may perhaps be thought to occasion so much expense in manual labour as to prevent its being generally adopted: it might perhaps be sufficient to observe, that if the work be conducted with judgment and economy, the future produce would afford ample returns for all necessary expenditure: it should also be recollected, that the previous preparation of the ground, and the subsequent pruning of the plants, are both to be performed at that season of the year when a scarcity of work will enable the planter to obtain assistance upon easier terms; with this additional advantage also, of providing employment for the labourer at those times when the general state of agricultural business renders it difficult for him  
to

to find maintenance for himself and family without charitable relief.

In 1750, at Ingestrie in Staffordshire, the seat of Lord Chetwynd, some plantations were formed and managed in a great measure according to the principles here stated, and the growth of the plants was so uncommonly rapid, and so extraordinary, that it could not but attract the notice of all concerned in the conduct of them. The attention to the subject, then excited, has been the occasion and ground of all the observations and experiments made from that time to the present, the result of which is given in this paper.

The extensive plantations of the late Lord Denbeigh, at Newnham Paddox, in Warwickshire, are well known and much admired. The whole has been conducted with great judgment. About a square acre has been employed in raising Oaks upon a plan nearly similar  
to

to that now proposed, and affords the best and most convincing proof of the superior utility and efficacy of such management. Had the Noble Earl been now living, I should have been enabled to have laid before the Society some more detailed particulars: That, however, is now impossible; this Paper, therefore, in its present state may perhaps be thought not altogether unworthy of notice, as tending to forward the liberal designs of the Society, and contributing to the advantage of the Public, the author conceiving that the best method of raising Oaks is ascertained and stated in it.

Should the Society be in any degree inclined to join in this sentiment, it may perhaps induce them to make some alteration in the terms of their proposal; as, according to the statements made in this Paper, and indeed from what may be seen in every part of the kingdom, in the character and appearance of Oaks growing without cultivation, it seems  
ascertained,

ascertained, that “ acorns set with the “ spade or dibble, without digging or “ tillage,” can never be depended on to form good timber ; and even in the most favourable circumstances of this case, the growth will be exceedingly slow and precarious. The same may be said of “ young plants, previously raised in “ nurseries, and transplanted ;” for if the tap-root be cut, broken, or in any degree injured, which in transplanting it is almost impossible to avoid, that plant will seldom become a vigorous and flourishing tree. To form a course of experiments on such a plant as the Oak, is not a very easy matter. To fulfil explicitly the conditions of the Society would require a great length of time, and would be attended with considerable expense, from which future candidates may in a great measure be exonerated. The raising even one acre in the manner here ascertained might be productive of great pecuniary advantage, if the facts and  
experience

experience detailed in this Paper are permitted to prove the inutility of the other two methods, and consequently to remove the necessity of employing so much ground upon them, at an expense they will never repay.

*Chelsea College, Nov. 4, 1801.*

TO MR. CHARLES TAYLOR.

The GOLD MEDAL, being the Premium offered for planting LARCH-TREES, was this Session adjudged to JOHN CHRISTIAN CURWEN, Esq. of Workington-Hall, in Cumberland; from whom the following Account and Certificates were received, stating that he had planted eighty-four thousand nine hundred Larch-Trees.

DEAR SIR,

ENCLOSED you have Certificates, with proper attestations, concerning my plantations of Larch-Trees. I might have called upon my friend the Bishop of Llandaff to answer for the progress they already make. The growth of the Larch is astonishing upon the highest hills. I wish I could speak with any satisfaction of my Oaks, for which I received the Gold Medal of the Society in 1787. I am again trying the planting acorns, but am very dubious of success.

I am

I am inclined to suspect the rapid rise of the moss decays the stem of the Oaks, and is the means of their failure. I hope to plant two hundred thousand Larch, as many Oaks, and half the number of Ash, this season. Could I have procured Larch-seed, it was my intention to have made an effort to equal Mr. Johnes's claim, but that I must omit. Upon dry hills the Larch will answer a much better end than Oaks. Wherever there was moisture, the acorns however succeeded well, and are in a thriving state: but, upon the whole, I fear the dibbling of acorns in ground which cannot be previously cleaned, will be found to be very uncertain; when it is attempted, it would be wise to go over the ground, and put in fresh acorns for two or three years.

I have been engaged for some time past in feeding my work-horses, and those employed in my collieries, with

H                      potatoes

potatoes instead of hay. I boil them with steam. I have for the last five weeks consumed 150 stone per day, and to each stone I put four pounds of cut straw. I have reason to hope I shall succeed ; and when satisfied of it, the whole process shall be submitted to the public. An acre of hay produces 260 stone, and an acre of potatoes 1400 stone. Supposing the seed to be equal, the gain is immense, and would lead to very important consequences, by encouraging the growth of wheat. The potatoe culture has been hitherto found too expensive to be carried to any very great extent. From the trials I have made, I am inclined to believe the boiling of potatoes would be found to be highly advantageous in fattening cattle.

It requires 300 acres to furnish hay for my work-horses ; and, from precarious seasons, I am often subject to great inconveniences ; but should potatoes



toes be found to answer, thirty-five acres will be amply sufficient.

I am, with respect,

Your obedient Servant,

J. CURWEN.

*Keswick, Dec. 1, 1801.*

CHARLES TAYLOR, Esq.

THE following Certificates accompanied Mr. Curwen's claim, viz. From Thomas Hodgson, of Belle-Isle, stating, that at Belle Grange, in the parish of Hawkshead, he had planted for J. C. Curwen, Esq. between October, 1798, and April, 1799, six thousand Larches, and that the same are well secured by stone walls, and are in a most thriving state: From John Sander, of Keswick, stating, that at Belle Grange, near Windermere Lake, he had planted for J. C. Curwen, Esq. between October, 1798,

II 2

and

and April, 1799, sixty-eight thousand Larch Firs, that they are well secured by a stone fence, and are in a very thriving state: From the Reverend Reg. Brathwaite, Minister of Hawkshead, dated 30th November, 1801, confirming both the above statements, and stating, that on a late view of the plantations he has found them in a most thriving condition: From William Unwin and William Turnbull, stating, that at Brathwaite Edge, and Workington, they had planted for J. C. Curwen, Esq. between October, 1798, and April, 1799, ten thousand nine hundred Larches, and that the same are well secured by railed fences, and in a very promising state: And, lastly, from the Reverend Peter How, Minister of Workington, dated 27th November, 1801, mentioning that he has lately seen the above-named planting, and that it appears to be in a highly thriving condition.

The

THE GOLD MEDAL, being the Premium offered for planting SILVER FIRS, was this Session adjudged to HENRY VERNON, Esq. of Hilton Park, near Wolverhampton; from whom the following Account and Certificates were received,

S I R,

I DO myself the honour of sending you the Certificates for my claim for planting Silver Firs. The plants now living are something more than six thousand two hundred and forty; and I have the pleasure to add, that the whole of my plantations are in a most flourishing condition.

I remain, with great respect,

Your most humble Servant,

HENRY VERNON,

*No. 10, Lower Wimpole-Street.*

Mr. CHARLES TAYLOR.

H 3

THIS

**T**HIS is to certify, that, between the 24th of June, 1797, and the 24th of June, 1798, in a mixed plantation of Forest-trees, I planted ten thousand Silver Firs, which my master, Henry Vernon, Esq. had from Scotland, and which, under my care, have been twice transplanted before, in a plantation of many acres, on the left side of the great gates leading into the turnpike-road that passes from Wolverhampton to Cannock; of which number there are now growing 6,240, in a most healthful state, from four to upwards of six feet in height. The ground for these trees was trenched two spade-graft deep, and cast into five feet ridges, which I find, from long practice under my master, for whom I have planted many hundred acres of good land, to succeed for plants of all kinds in the most luxuriant manner.

All Mr. Vernon's plantations are uncommonly well protected by ditches five feet

feet in width and three feet in depth, all cast on the sides of the plantations, with the additional security of posts and double rails of great strength, of oak, and double rows of quick, which being now six feet in height, are, as usual, about to be split, and laid down under the rails, when the plants fling out uncommonly strong new shoots, which, after growing two years, are headed, and then kept about two feet in height above the bank, and form an impenetrable thick hedge.

Given under my hand, this 11th day of December, 1801.

LAWRENCE GRAY,  
Gardener to Henry Vernon, Esq.

The above Account was confirmed by the Reverend John Clare, Vicar of Bushbury.

THE GOLD MEDAL, or THIRTY GUINEAS, at the option of the Candidate, being the Premium offered for planting OSIERS, Class 6, Vol. 19, was this Session adjudged to Mr. FREDERICK CLIFFORD CHERRY, of New Wood Farm, near Stoke D'Aubernon, in Surrey; from whom the following Accounts and Certificates were received, and who made choice of the pecuniary Reward.

SIR,

I BEG leave to present myself as a Candidate for the Premium offered by the Society for the Encouragement of Arts, etc. to the person who shall have planted the greatest quantity of land with Osiers, as I have planted sixty acres with the various kinds mentioned in the Society's advertisement, and which are in a very flourishing condition. I hope, at some future period, to have the  
honour

honour of acquainting the Society with the progress of the various kinds, and every particular relative to the same.

I am, SIR,

Your most obedient Servant,

FREDERICK CLIFFORD CHERRY,

*Stoke D'Aubernon,  
23d Nov. 1801.*

MR. CHARLES TAYLOR.

SIR,

IN compliance with the desire of your laudable Society, I will give all the information in my power respecting the planting of Osiers at New Wood Farm; and happy shall I be, if any thing I can say may be thought to be in any degree interesting.

The soil is a strong clay, resting on a retentive clay subsoil of great depth. It  
has

has long been in a state of tillage, and is enclosed by flourishing woody hedges. The soil is naturally of a weak nature, has been much impoverished by bad management, and, as arable land, is not worth five shillings per acre.

The greater part of the plantation in the year 1800 consisted of Oats, and received only one ploughing of a mean depth, previous to planting. Nine acres were wheat in 1800, after summer-fallow. Three acres in the same field, with the nine, were sown with grass-seed in the autumn of 1800, and were planted at the same time with the rest, without any preparation whatever, except that of harrowing once in a place. Eight acres, which were last planted, were in various states of tillage; some were a good fallow in 1800; some were sown with grass-seeds in the autumn of that year; and some were very grassy, and had lain all the summer without ploughing. The grassy part, and the part sown  
with



with grass-seeds, were ploughed once before planting; but the part which was summer-fallow was not ploughed.

The planting was begun on the 9th of February, 1801, and continued till the whole was finished, which was on the 23d of March.

The sets were large cuttings, of about eighteen inches in length, thrust into the ground by hand, leaving from four to six inches of their length above the surface.

They were all planted in rows from twenty-two to thirty inches asunder, and the sets from twelve to twenty-four inches asunder in the rows; but few were planted at the widest distances.

The plants made a more vigorous shoot in spring than they did afterwards; but they are allowed by judges to look uncommonly well. Very few sets have failed, perhaps not above a hundred on an acre, except in the field last planted, where the dead sets are more numerous.

This

This may be owing more to the treatment the sets received, than to the time in which they were planted. They were brought round the North and South Forelands, were put out of the ship into a barge, and from thence into a waggon, and then remained some time before they were planted.

Those plants that succeeded wheat are much the best Osiers ; and those planted on the seeds, without ploughing, are much the worst. They are invariably the best where the ground is cleanest ; and from this circumstance I am led to think, that summer-fallowing before planting would be judicious management.

A neighbour of mine planted 350 sets in his garden, 341 of which produced Osiers ; the rest died. The soil of the garden is clay. They were planted the latter end of March, in rows, thirty inches by twenty-one inches asunder, with beans between the rows. These

341 sets have produced a bundle of Osiers of about thirty-eight inches in circumference; and some of them are upwards of ten feet in length. This, I think, proves that the soil is congenial, and the tillage favourable to the growth of Osiers.

In the plantation already mentioned there are several sorts, but principally those known by the name of the New-kind. However, as I am not intimately acquainted with the varieties, I will not attempt to describe them.

Any farther information that the Society may require, and I have in my power to give, I shall be very happy to communicate.

I am, SIR,  
Your obedient Servant,  
F. C. CHERRY.

*New Wood Farm,  
Stoke D'Aubernon, Feb. 16, 1802.*

CHARLES TAYLOR, Esq.

THIS

**T**HIS is to certify, that Frederick Clifford Cherry, of the parish of Stoke D'Aubernon, in the county of Surrey, has, between the 1st of January and the 1st of April, 1801, planted sixty acres of Willows, commonly known by the names of Osiers, New-kind, and Red Willow, with not less than 17,000 on an acre; and that the same are now properly fenced, and in a thriving condition.

WM. ALLEN, Officiating Minister.

RICH. HARWOOD, Churchwarden.

The

THE SILVER MEDAL, OR TEN GUINEAS, at the option of the Candidate, being the Premium offered for planting OSIERS, Class 7, Vol. 19, was this Session adjudged to Mr. SETH BULL, of Ely, in Cambridgeshire; from whom the following Account and Certificates were received, and who made choice of the pecuniary Reward.

S I R,

ON reading over the list of Premiums offered by the Society for the Encouragement of Arts, etc. for the year 1801, I beg leave to claim the Premium for planting Osiers.

It may not be unnecessary to premise, that, in the year 1800, I purchased a piece of waste land that lies contiguous to the river Ouse, and is liable to be inundated by every flood. I mention this circumstance, because the value of such land is very little indeed for any other

other purpose than planting ; and, on account of its situation for moisture, and the accumulation of fresh soil by the winter floods, is the most proper for that purpose. This land, which was more than eight acres, and was dry during the summer of that year, which was very favourable, I prepared by throwing it up into bars, or beds, each being about a pole in width, and raised them more than a foot higher than the natural soil, for the reception of the sets, or plants, in the Spring of 1801 ; and, in the months of March and April last, I planted each of them at the distance of exactly twenty-one inches, that is, 14,223 per acre. The season was fine for the purpose ; and I have the satisfaction to add, that they have grown beyond my most sanguine expectation, the greater part being more than nine feet in height, and proportionably thick. I have spared neither expense nor care to keep them perfectly free from weeds,  
and

and well fenced ; and almost all of them will be, in the spring, fit to cut for the basket-maker's use, which is, I believe, an unexampled precedent for so large a quantity. The sorts consist of French, New-kind, West-country, Spaniards, and a few Welch, and Osiers, all of the best quality. I have added the most respectable Certificates of the truth of the above statement. One of them is signed by Thomas Page, Esq. who received the Honorary Premium for planting Osiers in 1799 ; and the other by the Reverend Mr. Mules, Domestic Chaplain to the Bishop of Ely, and Mr. Lutt, junior, who authorise me to declare, that it is the finest piece of wood they ever saw for the first year of planting ; and I think I may add, that it is universally allowed to be so by every person who has seen it.

I shall esteem myself very happy, should I be so fortunate as to receive the Society's Premium, the prospect of  
I which,

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which, I can assure you, acted as a stimulus to me in planting so large a quantity.

I am, SIR,

Your most obedient Servant,

SETH BULL.

*Ely, Cambridgeshire,*  
16th Nov. 1801.

CHARLES TAYLOR, Esq.

Two Certificates, viz. one from Thomas Page, Esq. of Ely, and the other from the Reverend Charles Mules and Mr. Lutt, jun. accompanied this Letter, as above mentioned, and confirmed Mr. Bull's statement.

The



The SILVER MEDAL was this Session presented to CHARLES GIBSON, Esq. of Quermore Park, near Lancaster, for planting 6000 Elms; from whom the following Accounts and Certificates were received.

SIR,

I NOW enclose the statement of the plantations of Charles Gibson, Esq. on the subject of whose claim I troubled you early in November.

I am, SIR,

Your obedient Servant,

CHARLES ARNOLD.

*Bedford-Row,  
8th Dec. 1801.*

CHARLES TAYLOR, Esq.

**T**HIS is to certify, that the under-mentioned number of Trees have been planted on the estate of Charles Gibson, Esq. of Quermore Park, near Lancaster, from the 1st of December, 1798, to the 1st of April, 1799, viz. *Thirty-five thousand Forest-Trees*, two and a half feet in height, and at the distance of from three to four feet; consisting of nearly an equal quantity of Oak, Larch, Beech, Birch, Mountain Ash, Sycamore, Elms, and Firs, and a mixture of Ash, Hornbeams, and Chesnuts. The above are planted upon waste land, properly fenced, principally with a ditch and bank railed, and partly with stone walls, etc. Thirteen thousand five hundred are likewise upon arable land in tillage, and were well manured the year before planting. Twenty-seven thousand Thorn Quicksets were also planted in new fences made within the above-mentioned time, making four hundred and thirty  
roods

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roods of seven yards, at nine plants in  
one yard.

ADOLPHUS PERRIE, Superintendant.

*Quermore Park,  
April 7, 1799.*

CHARLES GIBSON,

N <sup>o</sup>	
35,000	} Trees.
13,500	
<hr/>	
48,500	
<hr/>	
27,000	Quicks.

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On

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On inspecting the books, the number of Trees as above mentioned stand as follows :

Oak	-	-	-	-	-	-	-	-	7,500
Larch	-	-	-	-	-	-	-	-	7,500
Beech	-	-	-	-	-	-	-	-	6,500
Sycamore	-	-	-	-	-	-	-	-	7,000
Elms	-	-	-	-	-	-	-	-	6,000
Scotch Firs	-	-	-	-	-	-	-	-	2,000
Spruce do.	-	-	-	-	-	-	-	-	2,000
Common Ash	-	-	-	-	-	-	-	-	1,000
Mountain do.	-	-	-	-	-	-	-	-	2,000
Birch	-	-	-	-	-	-	-	-	5,000
Spanish Chesnuts	-	-	-	-	-	-	-	-	500
Horse do.	-	-	-	-	-	-	-	-	500
Hornbeams	-	-	-	-	-	-	-	-	1,000
									<hr/>
									48,500

THE

THE Bishop of Landaff testifies, that he has seen, in January, the plantations of Charles Gibson, and that they are in a most flourishing and thriving state.

R. LANDAFF.

*March 16, 1802.*

S I R,

I WAS aware that the total number of Trees planted by me between the 1st December, 1798, and the 1st of April, 1799, would fall short of other claimants; but I thought the Society would be glad to know that the desirable object of planting was pursued in this neighbourhood, though upon a small scale. On the receipt of yours of the 6th instant, I applied to the Gentlemen whose Certificate you have to this Letter, to inspect my plantations, in order to ascertain the state of the Elms, which they

I 4

found

found to be in general in a healthy, thriving condition. It is hardly possible to say what the distance is between each Elm, as they are planted promiscuously with seven or eight sorts of Trees, the whole of which are three feet distant from each other; but they were supposed to be about four or five yards distant. With respect to soil, about three thousand, or one half that number, were planted upon a stiffish soil, with a clay bottom, pulverized by two crops of corn previous to planting. The remainder were planted on a light loam, rather rocky, and which never had been, nor ever could be, cultivated to advantage. The holes for the plants were made two feet in diameter, and much pains was taken to break the sods in the uncultivated ground. I gave from 1s. to 1s. 2d. per hundred for making the holes. The plants were four years old when taken out of my nursery, where they had been two years, being purchased two-years-old

old seedlings, and in general about two feet and a half in height. Those upon the clay succeed the best, probably from the ground being in better order. As they were planted for ornament as well as utility, great care has been taken to preserve the fences. I beg leave to observe, that it is my custom to plant thick (being near the sea), and to thin out about the third year, by transplanting; or, when the plants incommode each other, to make one plantation serve as a nursery for another, till they stand at proper distances to remain for timber. By this method, the removed plants carry up their thickness, and the roots of those which remain, being *in part* cut, put out into the filled-up holes the spring following innumerable fibres, and thrive better than before. I must however observe, that when the Trees become large, they must not be transplanted into very exposed situations. This is all the information in my power to give,  
and

and I fear you will find it very unimportant.

I have only to add, that, exclusive of the Elms planted between the 1st December, 1798, and 1st April, 1799 (being 6,000), I have planted upon my estate, in other years, about 2,000 more; and have now between four and five thousand in the nursery to go out next season.

I am, SIR,-

Your obedient humble Servant,

CHARLES GIBSON.

MR. CHARLES TAYLOR.

The above Accounts are certified by Edmund Rigby, one of His Majesty's Justices of the Peace for the county of Lancaster, and P. M. Procter, Clerk, M. A. Perpetual Curate of Eaton.

The



The SILVER MEDAL was this Session presented to Mr. ROBERT BROWN, of Markle, near Haddington, in Scotland, for his Culture of BEANS and WHEAT in one year on the same Land; from whom the following Accounts and Certificates were received of his repeated Experiments on this Culture.

S I R,

I TAKE the liberty of transmitting to you an account of eighty-eight and a half acres of land drilled with Beans in the months of February and March, 1798, amongst which a few Peas were mixed, in order to improve the straw as fodder for horses, and for making ropes to tie the crop. The whole of the said land was sown with Wheat in the month of October the same year. I shall shortly  
state

state the mode of managing the Beans, being ready to give any further information that may be required.

The land was first cross-ploughed during the preceding winter, and about twenty acres were dunged previous to this furrowing being given, and ten acres more in the spring, when the Beans were drilled. The quantity of dung applied to the acre was about twelve cart-loads, each drawn by two horses, the weight of which might be about a ton. The land at seed-time was clean ploughed over, and the drill-barrow followed every third plough, which gave an interval between the rows of twenty-six or twenty-seven inches. The quantity of seed sown was from seventeen to nineteen pecks per acre, as those who managed the drill sometimes from inattention allowed it to sow a degree thicker at one time than another. The kind of Beans sown was the common Horse-bean,

bean, mixed, as I have already said, with a trifling quantity of Peas; and the average produce per acre of the whole fields sown was nearly thirty-six bushels per acre, the produce being altogether 3,258 bushels, Winchester measure. They were reaped from the first to the middle of September, and the straw was used for supporting the working-horses during the winter months.

It is now proper I should explain my method of cleaning or ploughing the land, when the crop was on the ground, which was effected by a one-horse plough, without any hand-hoe being used. I first harrowed it completely before the Beans appeared above ground, and water-furrowed and griped it. As soon as the Beans would stand the plough, a gentle furrow was given, and women were employed to turn any of the earth from the plants which might have been  
thrown

thrown upon them. Every succeeding furrow was taken deeper, and the last was used for laying the earth up close to the plants, which I consider as of great importance. They were ploughed four times ; and I estimated the whole expense of cleaning them at four shillings per acre, and that of drilling and harrowing at one shilling and fourpence. In no other way can the ground be cleaned at a less expense.

The soil upon which they were sown was a loam of different varieties. I have for many years practised this mode of husbandry for raising Beans, which have uniformly been succeeded by Wheat, and shall be happy to give you any information in my power respecting the culture of them. This year I have 110 acres, all managed in the way described. I inclose two Certificates, one of the measurement, and the other from two farmers of character, that I had such  
fields

fields in Beans and Wheat; and am,  
respectfully,

Your obedient Servant,

ROBERT BROWN.

*Markle, near Haddington, Scotland,  
28th October, 1799.*

MR. CHARLES TAYLOR.

I, WILLIAM DICKINSON, sworn measurer and land-surveyor at Linton, in the parish of Preston, and county of Haddington, North Britain, do hereby certify, that I have measured the after-mentioned fields, which were last year drilled with Beans, and sown the same year with Wheat, being part of the farms of Markle and West-Fortune, possessed by Robert Brown, Esq. and find the contents of each, in English statute acres, to be as under, viz.

*Upon*

*Upon Markle Farm.*

	A.
1. Long Side - - - - -	11.86
2. Wester Park - - - - -	7.70
3. Foreshot - - - - -	24.82
4. Long Inless - - - - -	11.18
	<hr/>
	55.56

*Upon West-Fortune Farm.*

	A.
5. North Crofts - - -	24.40
6. Dingleton - - -	8.54
	<hr/>
	32.94
	<hr/>
	A. 88.50

Amounting in all to eighty-eight and  
a half acres, English statute measure.

WILLIAM DICKINSON.

SIR,

S I R,

**H**AVING sown, according to the drill husbandry, four fields, consisting of eighty-nine acres, three roods, and six poles, English statute measure, with Beans, in the months of February and March, 1800, which were succeeded by Wheat sown in the month of October following, I beg leave to claim the Premium offered by the Society of Arts for these branches of husbandry.

The soil upon which these crops were raised was chiefly of that variety generally characterised as heavy loam, though part of it approached to a soft loam; and nearly the whole was incumbent upon a bottom retentive of moisture. Owing to the uncommon wetness of the autumn and winter months, I was prevented from giving the ground more than one ploughing, except one field, consisting of nineteen acres nearly, which was first cross-ploughed, and afterwards

K

ploughed

ploughed in length. The remainder was sown with Beans, the intervals between the drills being twenty-seven inches, in the months of February and March, 1800, after one ploughing; and the whole eighty-nine acres were managed afterwards in the following manner:

The ground was completely harrowed before the plants appeared above ground, and ploughed with one horse as early as the Beans were able to stand the operation. This ploughing was repeated about two months afterwards, and so on as often as necessary. The whole was ploughed four times during the summer months, and a part had five ploughings; and a picking of annual weeds by the hand was given to one of the fields. The total expense of drilling, horse-hoeing, and hand-picking, amounted to about five shillings per acre, upon an average.

The kind of Beans sown was the common Horse-bean, mixed with a few Peas, which were the best part of the crop.



crop. The season during the whole of 1800 was remarkably dry, which stunted the crop on the outset. The plants were therefore very short, and the produce when thrashed was only eighteen Winchester bushels per acre; though I am convinced, if a greater portion of Peas had been mixed with the Beans, the return would have been much superior.

The ground, after carrying Beans, was in excellent order; and, without any dung, yielded me a fine crop of Wheat in 1801. The Wheat was sown after one ploughing, in the month of October, 1800.

I am, SIR,

Your obedient Servant,

ROBERT BROWN.

*December 1, 1801.*

Mr. CHARLES TAYLOR.

K 2

SIR,

S I R,

**E**NCLOSED are Certificates of the crop of my Bean-fields of 1800, which were sown with Wheat in the October of that year. The Bean-crop was the worst I ever reaped, though, from being attentively cleaned, the ground was in good order for carrying a crop of Wheat the following year. The advantage of this mode of husbandry consists in this, that in the most unfavourable season the ground may be preserved in good order.

I have a fine crop of Beans this year, and I think the produce will be full thirty-six bushels per acre. I had about one hundred and ten acres under that grain, an account of which I shall probably send you next year.

I had only about thirty acres Spring Wheat this crop, last winter being so favourable as to admit a full sowing in October. With this small quantity I  
did

**AGRICULTURE. 133**

did not think it necessary to offer myself  
as a claimant.

I am, SIR,

Your most obedient,

ROBERT BROWN.

The Certificates alluded to in the  
above Letter are from Mr. William  
Dickinson, land-surveyor at Linton, in  
the parish of Preston, and county of  
Haddington ; Mr. Alexander Dodds,  
farmer at Newmains ; and Mr. Andrew  
Somerville, farmer at Atholstoneford ;  
and confirm Mr. Brown's statement.

The THANKS of the Society were this Session voted to T. S. DYOT BUCKNALL, Esq. M. P. for the following Communication relative to the HAMPTON-COURT VINE.

S I R,

THE famous Hampton-Court Vine, which I introduced into the 17th Volume of the Transactions of the Society, has this year received much splendour from a new house graciously ordered to be erected by his Majesty; this house being three feet wider, and two feet higher, than the old one. In order, likewise, that the Vine might sustain no injury from the external air, during the time of placing the new covering over it, at my request the old building was not removed until the other was fully completed; which new building was finished, and the glazing is going on,  
and

and will be placed in its proper station in the spring of 1802.

At present the glass, from the increased width and height of the house, is 72 feet by 21 feet; and, by the enlargement of a perpendicular light of 72 feet by 3 feet, makes together 1,728 superficial square feet of glass, placed over one Vine, and filling the whole house.

From the best information I could collect, this Vine was planted in the year 1770; and, from the fortunate station it has acquired, with the attention which is given to all the valuable fruits raised within the royal gardens, Mr. Padley and I entertain no doubt but it may continue in health and full bearing for a great length of time. I have been more minute than otherwise I should, from the wish, that whenever any curious production is observed in the vegetable kingdom, some intelligent person would record it for posterity, in any popular publication of the time. Such attention

would be of very material service in Horticulture, and the habit would gradually remove many doubts which obstruct the progress of improvements.

This Vine was at first selected rather accidentally, for I remember five different Vines within the same building. As it displayed a vigour, and a disposition to fruitfulness beyond the rest, it induced the chief manager to order the others to be cut away as this advanced; and it has occupied the whole space of the building for about twelve years. This is without doubt the most complete fruit-bearing plant that ever came within my observation.

In the former memorial I mentioned that no other plants were placed to grow under this Vine; but it would have been more correct in me to have said, “ No  
“ other plant will thrive under the shade  
“ of these Vine-leaves; for every pane  
“ of glass is nearly covered on the under-  
“ side, so that a clear uninterrupted  
“ light

“ light cannot extend to the ground, and  
 “ that is found to be very necessary for  
 “ the support of a healthy vegetation.”

It is well worthy of remark, that this Vine, from being excluded from the external air, little heated by fire, kept perfectly clean, and regularly attended through all its progress, IS NOT SUBJECT TO BLIGHT ; neither is it liable to many other casual evils, to which fruit-bearing trees are much disposed : and other fruit-trees would be as clear from blight as this Vine, were they as well guarded from injuries.

In the Papers forming a Treatise on Blight, which the Society have honoured by publishing in their Transactions, I remarked, “ We cannot afford to place  
 “ our plantations within hot-houses for  
 “ their protection ; yet the principles of  
 “ blight being established, and known,  
 “ that under shelter it may be prevented,  
 “ will be found of very essential service  
 “ in

“ in general practice, by leading man-  
“ kind to advert to the natural causes  
“ of blight, and from those sources to  
“ establish a system of proper precau-  
“ tions ; or, having happened, in part to  
“ remove the ill effects arising therefrom,  
“ as are expressed in Classes 80 to 83  
“ for the Premiums offered.” This I  
have much enlarged upon in former  
Papers, to good purpose, for practice,  
and here repeat : Prune, wash, manure,  
and perform any operations rationally  
tending to keep the *trees in health* ; but  
by all means scrape off the rotten bark,  
and smear the trees over with oil, and  
any cheap drug to offend the insects, as  
recommended in the 18th volume.

When the area of glass was only 1,300  
square feet, the Vine was permitted to  
carry each year 1,800 bunches of grapes.  
As the area is now enlarged to 1,730  
feet, it is presumed the plant will well  
support 2,400 bunches.

To



To such as are but little acquainted with subjects of this kind, it may seem singular that it should be possible to predict the number of bunches the Vine is to produce in each year. Such persons should be informed, that the plant is not permitted to follow its own natural propensities, either in growth or bearing, but is kept perfectly under the controul of the gardener. Were the plant left to itself, the individual grape or bunches would not be so large, neither would they ripen so well, or produce the beautiful bunches which are seen there at present.

This is a very proper place for me to request of those who are entrusted with the management of valuable fruits, to be attentive to thin them sufficiently in due time; to foresee how the crop is likely to fill up, by reflecting on the natural size of the fruit; and never to suffer any part of the tree to be overloaded, or the fruit much cluttered together.

gether. Such neglect not only injures the present crop, but prevents the plant from continuing in sufficient strength to throw out the blossoms, and have them duly impregnated for the next summer's production. In the first Paper which I presented to the public upon Orchard-ing, I took care to place this subject in its proper light, observing, that it is the fine fruit which sells the orchard, and invariably produces the most credit, pleasure, and profit to the grower.

I think, in some of the former Papers, I have mentioned, that in the fruit-bearing trees, the fruit improves as the tree advances in strength, and after that time as gradually declines. The Cherry will go on some time longer.

The public should be attentive to names and discriminations of the different fruits, as of consequence in the improvement of the art. This Vine is called the Black Hamburgh; but I should suspect, from the freedom of growth,

growth, health, and regular good bearing, that it is a new variety. This term, with regard to fruits, is fully explained in the 17th volume of the Transactions of the Society, and in the second volume of the Orchardist.

Where the stem enters the house, it now girths sixteen inches ; and, to give some appearance of proof for what I advanced with regard to the probable duration, Speechley, on the Culture of the Vine, mentions, that Strabo observed that flooring-boards were cut out of the stems of Vines ; consequently they must have grown to a large size in those climates, and lived to a great age : and very slight reflexion will convince the practitioners, that an extensive forcing-house is the finest station in the world for the grape, under such culture as it will probably meet with in the royal gardens ; because a forcing-house may be accommodated to any climate.

It

It has been before remarked, that some branches of this Vine run more than a hundred feet, and that the grapes growing on the extreme ends are the finest fruit: and, to ascertain some experiments, Mr. Padley obligingly intends, when the time of training arrives, to attempt to lead one of the longest and clearest branches directly horizontal on the wall, under the highest range of glass. This idea will require some years to accomplish, but when effected will add 70 feet to the present 100, and will make a run of 170 feet round the three sides of the house. Thus, for instance, stem 8 feet  $+72+21=101$ ; add the returned run of 70 feet from north to south, and the total will be 171 feet in length. I do not apprehend that any tree in Britain has run to such an extent.

I have been the more induced to attend to the culture and growth of this Vine, from a desire of improving the mode of forcing grapes, both as to the manner

manner of applying the fire and construction of the buildings, so as to produce a great quantity of fine perfectly ripe forced grapes at a small expense. I wrote an Essay on this subject three years ago. Should any further material circumstance affect this Vine during my time, I shall take care to present the same to the Society,

I am, SIR,

Your most obedient Servant,

THOMAS SKIP DYOT BUCKNALL.

*Hampton-Court,*  
8th October, 1801,

CHARLES TAYLOR, Esq. Secretary.

The

THE THANKS of the Society were this Session presented to THOMAS SKIP DYOT BUCKNALL, Esq. for the following Communication on the NATURE of the VARIETIES of ENGRAFTED FRUIT-TREES, and his Plan for increasing the Number of new valuable Fruits.

S I R,

SOME friends have requested that I would introduce another Paper on the Nature of the valuable Varieties of engrafted Fruits, as they are of opinion that the Essay in the 17th Volume of the Transactions of the Society is not sufficiently extended for a subject so important to the Fruit-growers, and those interested in the productions of Fruits. As a proof of my willingness to make the Orchardist as perfect as I can, I beg you to present my compliments to the Society, with the following elucidations.

This

This is a subject in rural economy which ought to be much better understood than it is, in order to enable the planters to judge of the sorts proper to be planted, either as an article of pleasure, profit, or recreation; as much of the credit of the plantation must arise from judiciously choosing Trees of the best, new, or middle-aged sorts, and not of the old worn-out varieties, which latter cannot, in the planting of Orchards in common situations, ever form *valuable Trees*, and must end in the disappointment of the planter.

Engrafted Fruits, I have before said, and I now repeat, are not permanent. Every one of the least reflexion must see that there is an essential difference between the power and energy of a seedling plant, and the tree which is to be raised from cuttings or elongations. The seedling is endued with the energies of nature, while the graft, or scion, is nothing more than a regular elongation,

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carried

carried perhaps through the several repetitions of the same variety ; whereas the seed, from having been placed in the earth, germinates and becomes a new plant, wherever nature permits like to produce like in vegetation ; as in the oak, beech, and other mast-bearing trees. These latter trees, from each passing through the state of seedlings, are perfectly continued, and endued with the functions of forming perfect seeds for raising other plants by evolution, to the continuance of the like species.

This is not the case with engrafted Fruits. They are doomed by nature to continue for a time, and then gradually decline, till at last the variety is totally lost, and soon forgotten, unless recorded by tradition, or in old publications.

Reason, with which Providence has most bountifully blessed some of our species, has enabled us, when we find a superior variety, to engraft it on a wild-stock, or to raise plants from layers  
and



and cuttings, or even to raise up the roots, and thus to multiply our sources of comfort and pleasure. This, however, does not imply that the multiplication of the same variety, for it is no more, should last for ever, unless the species will naturally arise from seed.

Nature, in her teaching, speaks in very intelligible language, which language is conveyed by experience and observation. Thus we see that among promiscuous seeds of fruits of the same sort, one or more may arise, whose fruits shall be found to possess a value far superior to the rest in many distinguishable properties. From experience, also, we have obtained the power, by engrafting, of increasing the number of this newly-acquired tree, can change its country, give it to a friend, send it beyond the seas, or fill a kingdom with that fruit, if the natives are disposed so to do. Thus we seem to have a kind of creative power in our own hands.

From the attention lately paid to the culture of engrafted Fruits, I hope we are now enabled to continue a supposed happily acquired tree, when we can find it, for a much longer duration than if such variety had been left in the state of unassisted nature; perhaps I may say for a duration as long again, or something more. After these sanguine expectations, I may reasonably be asked, to what does all this amount? for here there is no direct permanency—and why? The *why* is very obvious—because the kernels within the fruit, which are the seed of the plants for forming the next generation of trees, will not produce their like. I allow they may do so accidentally; but nothing more can be depended on.

For example, suppose we take ten kernels or pips of any apple raised on an engrafted stock: sow them, and they will produce ten different varieties, no two of which will be alike; nor will either  
of

of them closely resemble the fruit from whence the seeds were collected. The leaves also of those trees raised from the same primogenious or parent stock, will not *actually* be a copy of the leaves of any one of the varieties or family, to which each is connected by a vegetable consanguinity. I intentionally used the word *actually*, because a resemblance may be found, though not much of that is to be expected.

I beg that what has been last mentioned may not be taken as a discouragement to attempts for raising new varieties. I was obliged to speak very strongly, in order to place the culture upon its true foundation. I think it need not be observed, that there is no acquiring a new variety, but through the means of a seedling plant; and therefore whoever wishes to succeed must attempt it that way, or wait till others in their plantations may more fortunately produce it.

In choosing the seeds, that apple is most likely to produce the clearest and finest plants, whose kernels are firm, large, and well ripened. The size of the fruit is not to be regarded; for large apples do not always ripen their fruit well, or rather for cider the small fruits are generally preferred for making the strongest, highest-flavoured liquor. And from what I have been able to collect in the cider-countries, it is there the opinion, that an apple something above the improved crab promises the best success. This advantage also attends the practice: if there are no valuable apples raised from that attempt, these wildings will make excellent stocks to engraft upon.

Gentlemen who actually employ themselves in attempting to acquire new varieties, should remember that they ought to select all the sets, from the bed of apple-quick, whose appearance is in the least degree promising, and plant them together, at such a distance as to allow each

each to produce its fruit, which will happen in about twelve, fifteen, or eighteen years. My friend Mr. Knight, who undoubtedly is the first in actual exertions for procuring these happily acquired new varieties, has had two plants bear fruit at six years old, and one at five. The cider-countries have offered several premiums for procuring new varieties, and some with good effect. Premiums have been given both to Mr. Knight and Mr. Alban.

When the new variety is to be raised from a valuable *admired* apple, I should recommend the placing these seeds in a garden-pot, filled with mould from an old melon-bed ; carrying the pot into a retired situation near the water, and giving attention to run the plants to as large a size as is convenient within eighteen months. With this view, the pot should be placed in the green-house the first winter ; and when the plants are afterwards to be set out in the spots,

they should not be placed under the drip of trees, or much exposed to the winds.

Two instances have been mentioned, the improved crab, and most admired apple; but prudence says, try all sorts, and something probably will arise; and the process is attended with little trouble or expense to a person who constantly resides in the country: yet, after all this scientific care, the apple may want flavour, and be in other respects nothing better than a common wilding.

It is an undoubted fact, and worthy of observation, that all the different trees of the same variety have a wonderful tendency to similarity of appearance among themselves; and that the parent stock, and all engrafted from it, have a far greater resemblance to each other, than can be found in any part of the animal creation; and this habit does not vary to any extent of age.

As

As an encouragement in attempting to increase the number of new valuable fruits, we can prove that the golden pippin is native English. The red-streak, a seedling of Herefordshire, if not raised, yet was first brought into notice by Lord Scudamore, and was for a long time called Scudamore's Crab. The Stire Apple was accidentally raised in the Forest of Dean, in Gloucestershire, and took the name of *Forest Stire*. The cider made from this apple was the strongest the country ever produced, according to any living record. The Haglo-crab, the best cider fruit now remaining, was discovered in the parish of Ecloe, on the banks of the Severn ; and, about sixty or seventy years ago, many scions were taken from this tree by Mr. Bellamy, and engrafted on seedling stocks about Ross. These are now grown old ; and, to ascertain the age of the variety, I went with Charles Edwin, Esq. to Ecloes, in hopes of seeing the primogenious of this family.

The

The proprietor of the estate acquainted Mr. Edwin that it had ceased to bear years ago, and was cut down. Those at Ross are but poor bearers now, and I should suppose the variety must be 140 years old, though Marshal, who wrote in the year 1786, mentions these trees were prolific, and he supposes the sort to be about eighty years old; but, from present experience, it must be much more. The Tinton Squash-pear is of Gloucestershire; the Barland and Old-field were near Ledbury, Herefordshire. The two last pears clearly bear the names of the two fields where they were raised. The Barland fell about six years ago, visibly from weight and longevity, which was supposed to have been about 200 years. There have been many other names of estimation handed down to us, though the realities are now totally worn out, and have ceased to exist. Can any better proof be desired, that engrafted fruits are not permanent, than the regret  
we



we feel for the loss of these old valuable fruits.

To make my Paper as short as convenient, I have dwelt only on the Apple and Pear; yet all the engrafted fruits are under the same predicament of the seed not producing its like, and the offspring in time falling into a nothingness of growth and bearing, though that space of time must certainly depend on the natural longevity and hardiness of the sort, soil, position, care, etc. All these are more fully expressed in the papers published in the different volumes of the Transactions of this Society, and the two volumes of the Orchardist, wherein the whole system is extended, to form a rational culture for the management of Standard Fruits.

It should be remembered, that as I am now alluding to the state of actual permanency, fifty years are to be accounted as nothing; and as often as we come to that point, we are compelled to  
resort

resort to our first assertion, “ That en-  
“ grafted fruits are not permanent, they  
“ being continued from elongations, and  
“ not raised as a repetition of seeds.”  
This is the only rational way as yet in-  
troduced of accounting for the loss of the  
valuable old varieties of fruits. Should  
a better system be introduced, I shall  
readily adopt it ; but this sufficiently  
answers the purposes of the planter.

Some years ago, from due investiga-  
tion and thorough conviction, I propa-  
gated this principle ; and it was published  
in the 17th volume of the Society’s  
Transactions, in the following words :  
“ All the grafts taken from this first tree,  
“ or parent stock, or any of the descend-  
“ ants, will for some generations thrive ;  
“ but when this first stock shall, by mere  
“ dint of old-age, fall into actual decay,  
“ a nihility of vegetation—the descend-  
“ ants, however young, or in whatever  
“ situation they may be, will gradually  
“ decline ; and, from that time, it would  
“ be

“ be imprudent, in point of profit, to  
 “ attempt propagating that variety from  
 “ any of them. This is the dogma which  
 “ must be received. I do not expect a  
 “ direct assent, neither do I wish it, for  
 “ it should be taken with much reserve;  
 “ but it is undoubtedly true.” These  
 considerations should stimulate us in  
 searching after new varieties, equal, or  
 perhaps superior, to those of which we  
 regret the loss.

Observe that, from the time the kernel  
 germinates for apple-quick, should the  
 plant be disposed to form a valuable  
 variety, there will appear a regular pro-  
 gressive change, or improvement, in the  
 organization of the leaves, until that  
 variety has stood, and grown sufficient  
 to blossom and come into full bearing;  
 that is, from the state of infancy to  
 maturity; and it is this and other  
 circumstances, by which the inquisitive  
 eye is enabled to form the selection  
 among those appearing likely to become  
 valuable

valuable fruits. But from that time the new variety, or selected plant, compared with all the engraftments which may be taken from it, or any of them, these shall shew a most undeviating sameness among themselves.

It is readily allowed, that the different varieties of fruits are easily distinguished from each other by many particulars, not only respecting their general fertility, and the form, size, shape, and flavour of the fruit, but also the manner of the growth of the tree, the thickness and proportion of the twigs, their shooting from their parent stem, the form, colour, and consistence of the leaf, and many other circumstances, by which the variety can be identified; and were it possible to engraft each variety upon the same stock, they would still retain their discriminating qualities, with the most undeviating certainty.

The proper conclusion to be drawn from the statement in the last paragraph, is

is this—that were any one to put the thought in practice on a full-grown hardy or crab stock, it would produce an excellent proof that engrafted fruits are not permanent. For if twenty different varieties were placed together, so that each might receive its nurture from the same stem, they would gradually die off in actual succession, according to the age or state of health of the respective variety, at the time the scions were placed in the stock; and a discriminating eye, used to this business, would nearly be able to foretell the order in which each scion would actually decline. Should it also happen that two or three suckers from the wilding stock had been permitted to grow among the *twenty grafts*, such suckers or wilding shoots will continue, and make a tree after all the rest are gone. A further consequence would result from the experiment: among such a number of varieties, each of the free growers would starve the delicate,  
and

and drive them out of existence only so much the sooner. It must be observed, that this supposed stem is the foster-parent to the twenty scions, and real parent to the suckers; and those the least conversant with engrafted fruits know the advantage acquired from this circumstance. And here it is worth while remarking, that a Gascoyne, or wild cherry, will grow to twice the size that ever an engrafted cherry did.

By an experiment we have had in hand for five years, it will appear that the roots and stem of a large tree, after the first set of scions are exhausted or worn out, may carry another set for many years; and we suspect a third set, provided the engrafting is properly done, and the engrafter chooses a new variety. Now the Ripston Pippin, of Yorkshire, is the favourite, as being a free grower and good bearer, with fine fruit. This however may be certainly depended on, that when a new apple is raised from seed,  
if

if a scion were placed in a retired situation, and constantly cut down, as a stool in a copse-wood, and the apple never suffered to fulfil the intentions of nature in bearing fruit, the practitioners of the following ages may secure scions from that stool, to continue the variety much longer. Hence, though I have written as much as is in my power against permanency, yet I have taken some pains to assure the planters, that forecast, selection, pruning, cleanliness, and care, will make the orchards turn to more profit for the rising generations, than what they have done for the last hundred years.

To place the nature of varieties in its true light, for the information of the public, I must maintain, that the different varieties of the apple will, after a certain time, decline, and actually die away, and each variety, or all of the same stem or family, will lose their existence in vegetation; and yet it is a

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known

known fact, and mentioned in the 17th volume of the Transactions, that after the debility of age has actually taken possession of any variety, it will yet thrive by being placed against a southern wall, and treated as wall-fruit. Who, however, can afford to raise cider at that expense, except as matter of curiosity, to prove, that when the vital principle in vegetation is nearly exhausted, a superior care and warmth will still keep the variety in existence some time longer ?

It should be understood, that the external air of Britain is rather too cold for the delicate fruits, which is the reason why, in the Orchardist, I lay such a stress on procuring *warmth* for the trees, by *draining*, *shelter*, and *manure*. It would be now lost time to attempt to recover the old varieties as an article of profit.

If I have not expressed myself, in this Essay on the Nature of Varieties, with



so much clearness and conviction as might have been expected, it should be considered that it is an abstruse subject, very little understood, and requiring at first some degree of *faith, observation,* and *perseverance*. The prejudices of mankind revolt against it. They are not disposed to allow the distinction of nature; and they imagine, that in the act of engrafting or multiplying they give new life, whereas it is only continuing the existence of the same tree, stick, or bud. Observe what I said before:—the seed of the apple, when placed in the earth, germinates, and unfolds itself into a new plant, which successively passes through the stages of infancy, maturity, and decay, like its predecessors. I might say, all created nature is similar in this respect; though, from the circumstance that varieties are much longer-lived than man, the plants have appeared to be possessed of eternal

powers of duration : nothing sublunary, however, which possesses either animal or vegetable life, is exempt from age and death.

Within the last twenty years I have travelled many hundred miles, and conversed with the most intelligent men in each country ; and I now want to convince mankind, for no other reason than because it is their interest so to believe, that there is in creation an order of beings (engrafted fruits) so formed, that we have the power of multiplying a single variety, to whatever number of trees we please ;—that the first set arises from a small seed ;—that the next and descendant sets are propagated by engraftings, or from cuttings, layers, etc. ; —and that although these trees may amount to millions, yet, on the death of the prinogenious or parent stock, merely from old-age, or nihility of growth, each individual shall decline,  
in

in whatever country they may be, or however endued with youth and health. I say they shall gradually begin to decline; and in the course of time, or of centuries, to those who would prefer that expression, the *whole variety* will scarcely have a single tree remaining to show what the fruit was. Let those who are not disposed to assent to this statement, ask themselves what is become of the old lost varieties? did they die, or did wicked men maliciously cut them up?

I, who am firmly convinced of the truth of what I have advanced on this subject, have no doubt but that the same would happen by engrafting on the Oak or Beech, if the mast raised from the engrafted tree did not produce the like; for there the question turns.

Is it not known, that the woodman, in setting out his sapling oaks, always selects new seedling plants, and never

continues one upon an old stool; and that if he should so blunder, that tree, from the stool, will neither have the freedom of growth, nor the size or firmness of timber, equal to a new-raised plant.

I wish I could persuade my friends, that, with the same attention with which the woodman acts, the planter is to raise his orchard from the young fruits which thrive in the neighbourhood, or are in health and full bearing in the country whence they are to be brought.

The fruit-grower should look to selection, cleanliness, and care. To me it is a circumstance perfectly indifferent, whether he is to use Mr. Forsyth's composition, Mr. Bulingham's boiled linseed oil, or my medication. I only maintain that the wounded parts of trees want something to destroy the insects and vermin, and heal the wood, from which the trees are kept in health.

Let

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Let those who are blessed with fruit-plantations attend to their preservation, and not leave them to the state of un-assisted nature.

I am, SIR,

Your most obedient Servant,

THO. SKIP DYOT BUCKNALL.

*Hampton-Court,*  
12th Oct. 1801.

MR. CHARLES TAYLOR,  
Secretary, Adelphi.

THE SILVER MEDAL was this Session presented to WILLIAM FAIRMAN, Esq. of Millers-House, near Sitting-bourn, in Kent, for his Experiments on Extreme-Branch Grafting of FRUIT-TREES, from whom the following Account and Certificates were received, and to which an Engraving and Description are annexed.

S I R,

FROM much conversation with Mr. Bucknall on the idea of improving standard Fruit-trees, we could not but remark that in Apple Orchards, even in such as are most valuable, some were to be seen that were stinted and barren, which not only occasioned a loss in the production, but made a break in the rows, and spoiled the beauty and uniformity of the plantation.

To bring these trees into an equal state of bearing, size, and appearance, in  
a short

a short time, is an object of the greatest importance in the system of Orcharding, and also for the recovery of old barren trees, which are fallen into decay, not so much from age, as from the sorts of their fruits being of the worn-out and deemed nearly lost varieties.

Having long entertained these thoughts, and been by no means inattentive to the accomplishment of the design, I attempted to change their fruits by a new mode of engrafting, and am bold enough to assert that I have most fortunately succeeded in my experiments; working, if I am to be allowed to say it, from the errors of other practitioners, as also from those of my own habits.

My name having several times appeared in the transactions of the Society for the Encouragement of Arts, etc. and having the honour of being a member of that Society, I thought no pains or expense would be too much, for the completion of so desirable an improvement,

ment. Under these impressions, and having many trees of this description, I made an experiment on three of them in March, 1798, each being nearly a hundred years old. They were not decayed in their bodies, and but little in their branches. Two of these were golden pippins, and the other was a golden rennet. Each likewise had been past a bearing state for several years. I also followed up the practice on many more the succeeding spring, and that of the last year, to the number of forty at least, in my different plantations. \*

The attempt has gone so far beyond my most sanguine expectation, that I beg of you, Sir, to introduce the system to the Society, for their approbation; and I hope it will deserve the honour of a place in their valuable Transactions.

I directed the process to be conducted as follows: Cut out all the spray wood, and make the tree a perfect skeleton,  
leaving

\* The average expense I calculated at 2s. 6d. each tree.



leaving all the healthy limbs ; then clean the branches, and cut the top of each branch off where it would measure in circumference from the size of a shilling to about that of a crown piece. Some of the branches must of course be taken off where it is a little larger, and some smaller, to preserve the canopy or head of the tree ; and it will be necessary to take out the branches which cross others, and observe the arms are left to fork off, so that no considerable opening is to be perceived when you stand under the tree, but that they may represent an uniform head. I must here remark to the practitioner, when he is preparing the tree as I directed, that he should leave the branches sufficiently long to allow of two or three inches to be taken off by the saw, that all the splintered parts may be removed.

The trees being thus prepared, put in one or two grafts at the extremity of each branch ; and from this circumstance

I wish

I wish to have the method called *Extreme Branch Grafting*.

A cement, hereafter described, must be used instead of clay, and the grafts tied with bass or soft strings. As there was a considerable quantity of moss on the bodies and branches of the trees, I ordered my gardener to scrape it off, which is effectually done when they are in a wet state by a stubbed birch broom. I then ordered him to brush them over with coarse oil, which invigorated the growth of the tree, acted as a manure to the bark, and made it expand very evidently; the old cracks were soon, by this operation, rendered invisible.

All wounds should be perfectly cleaned out, and the medication applied as described in the Orchardist, p. 14. By the beginning of July the bandages were cut, and the shoots from the grafts shortened, to prevent them from blowing out. I must here, too, observe that all the shoots or suckers from the tree must  
enjoy

enjoy the full liberty of growth, till the succeeding spring, when the greater part must be taken out, and few but the grafts suffered to remain, except on a branch where the grafts have not taken : in that case, leave one or more of the suckers, which will take a graft the second year, and make good the deficiency. This was the whole of the process. \*

By observing what is here stated, it will appear that the tree remains nearly as large when the operation is finished, as it was before the business was undertaken ; and this is a most essential circumstance, as no part of the former vegetation is lost, which is in health fit to continue for forming the new tree.

It is worthy of notice, that when the vivifying rays of the sun have caused the sap to flow, these grafts inducing the

\* The system succeeds equally well on pear, as also on cherry trees, provided the medication is used to prevent the cherry tree from gumming.

the fluid through the pores to every part of the tree, will occasion innumerable suckers or scions to start through the bark, which, together with the grafts, give such energy to vegetation, that in the course of the summer the tree will be actually covered over by a thick foliage, which enforces and quickens the due circulation of sap. These, when combined, fully compel the roots to work for the general benefit of the tree.

In these experiments I judged it proper to make choice of grafts from the sorts of fruits which were the most luxuriant in their growth, or any new variety, as described in the 17th and 18th volumes of the Society's Transactions, by which means a greater vigour was excited; and if this observation is attended to, the practitioner will clearly perceive, from the first year's growth, that the grafts would soon starve the suckers which shoot forth below them, if they were

were suffered to remain \*. With a view to accomplish this grand object of improvement, I gave much attention, as I have before observed, to the general practice of invigorating old trees; and I happily discovered the error of the common mode of engrafting but a short distance from the trunk or body, as in *Fig. 1*. There the circumference of the wounds is as large as to require several grafts which cannot firmly unite and clasp over the stumps, and consequently these wounds lay a foundation for after-decay. If that were not the case, yet it so reduces the size of the tree, that it could not recover its former state in many years, and it is dubious if it ever would; whereas, by the method of extreme grafting, as *Fig. 3*, the tree will be larger in three or four years, than before the operation

\* This thought should be kept in suspense, as ten years hence it may appear otherwise. However, they will be valuable trees, and highly profitable, as will any other brought under the same system.

tion was performed. For all the large branches remaining, the tree has nothing to make but fruit-bearing wood; and from the beautiful verdure it soon acquires, and the symmetry of the tree, no argument is necessary to enforce the practice.

*Fig. 2* was my first experiment about eight years since. The error of No. 1 was there a little amended, and gave me the idea of engrafting at the extremity. Permit me to remark that those done in my Orchards, on the plan of *Fig. 2*, did not, neither were they able to bear so many apples last season, which was a bearing year, as those on the plan of *Fig. 3*, which produced me about two bushels each tree of the finest fruit I had in my Orchards, from the third summer's wood only. Some engrafted with Ribston pippins were beautiful.

Mr. Bucknall visited me this summer for the express purpose of seeing my trees; and he says the manner of conducting

ducting the system is the happiest that ever was conceived. For when a tree has done its best, and has continued to extreme old-age, just disposed to fall into dissolution, as also when this is the case with trees in a stagnated and barren state, they are thus renovated, and may, with the greatest probability, continue valuable for fifty years to come. I need not say, do not make the attempt when the energy of growth is over; that will easily be seen by the body and arms, but more particularly from the size, figure, shape, and colour of the leaves, which give the proper indication of health or decay in vegetation.

Should the Society desire it, several gentlemen resident here, will gladly send up certificates to confirm the statements.

I remain, SIR,

Your most obedient Servant,

WM. FAIRMAN.

*Millers-House, near Sittingbourn, Kent,  
Feb. 9, 1802.*

CHARLES TAYLOR, Esq.

N

## CEMENT FOR ENGRAFTING.

One pound of pitch	} To be boiled up together, but not to be used till you can bear your finger in it.
One do. . . . rosin	
Half do. . . . beeswax	
Qtr. do. . . . hogslard	
Qtr. do. . . . turpentine	}

S I R,

THIS is to certify to the Society for the Encouragement of Arts, etc. that William Fairman, of Millers - House, Lynsted, Esq. has long been a steady and zealous promoter of the improvement of the standard fruits of the country; and that he planted one entire Orchard, of sixteen acres, ten years ago.

The system of extreme-branch grafting, now introduced to the public, he has had in contemplation full eight years, though not in its present style of success



success and elegance; for he has been improving. In those operated upon within the last three or four years he has been wonderfully successful, and I am happy in an opportunity of adding my testimony to the advantages resulting from this method of renovating old fruit-trees.

An idea equal to the present system could not have fallen into better hands than those of Mr. Fairman. He is blessed with a good soil, cultivates the land well, and steadily attends to improvement. The gentlemen of the Committee, by looking at the three little sketches of drawings which represent the three trees, will see that *Fig. 1* is so amputated, as not likely to continue in health, so as again to form a good tree; and that *Fig. 2* will be many years before, if *ever* it does. But there are now many fine large trees in the state of *Fig. 3*, which have been engrafted but three or four years, and yet, as far

as structure goes, are complete already, and in two years much fine fruit may be expected.

The system is as follows: Make the trees perfectly clean, and keep them as uniformly large as is convenient.

In autumn, 1801, I spent some days at Lynsted, and several times walked over the Plantations with Mr. Fairman, and was very much pleased with their appearance.

I remain, Sir,

Your obedient Servant,

THOMAS SKIP DYOT BUCKNALL.

*February 22, 1802.*

CHARLES TAYLOR, Esq.  
Secretary.

RE-

REFERENCE to the Engraving of  
Mr. FAIRMAN's method of Extreme-  
Branch Grafting ; Plate I. Fig. 1, 2,  
3, 4.

*Figure 1.* displays the old practice,  
commonly called Cleft-Grafting.

*Fig. 2.* Improved experiment on *Fig. 1*,  
by engrafting higher up the tree.

*Fig. 3.* shows the method of Extreme-  
Branch Grafting, recommended from ex-  
perience, by Mr. Fairman. Two grafts  
or cyons are there placed at the ex-  
tremity of each branch ; besides which,  
additional grafts are inserted in the sides  
of the branches ; as, at AAAAAA, or  
where they are wanted to form the tree  
into a handsome shape.

*Fig. 4.* shows upon a larger scale  
than the former figures the method of  
applying the grafts at the extremity of  
the branches, and retaining them by the  
bass-mat bandage and cement.

*Mr. W. Fairman's Method  
of Extreme Branch Grafting.*



Fig. 1.

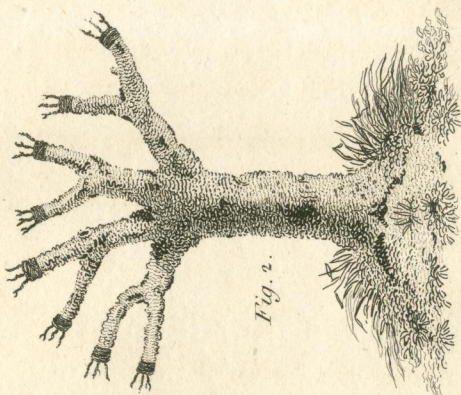


Fig. 2.

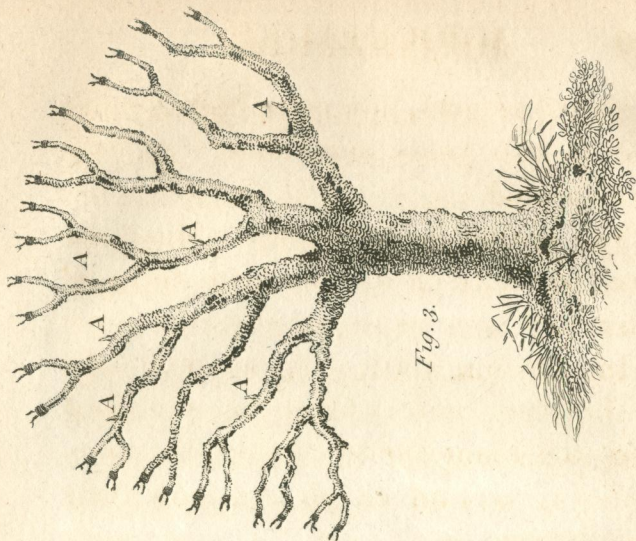


Fig. 3.



Fig. 4.

The GOLD MEDAL, being the Premium offered for SOWING, PLANTING, and ENCLOSING TIMBER-TREES, was this Session adjudged to THOMAS JOHNES, Esq. M. P. of Hafod in Cardiganshire; from whom the following Accounts and Certificates were received,

S I R,

I SHALL shortly forward to you the particulars of the Timber-trees which I have planted between the 1st of October, 1797, and the 1st of May, 1799.

My plantations are generally made on such land as I cannot plough, that my best ground may be reserved for grain and grass. I plant the sides of mountains, which are almost universally composed of argillaceous shistus, or slate-rock; the surface of which is decomposed by exposure to the atmosphere,

Devon cows . . . .	gave of butter . . . . .	7 oz. $\frac{7}{8}$
Small Scotch cows	do. . . . .	6 oz.
Guernsey cows . .	do. . . . .	$5\frac{1}{2}$ oz.
Devon cows . . . .	gave of cheese . . .	1 lb. 8 oz.
Small Scotch cows	do. . . . .	$14\frac{1}{2}$ oz.
Guernsey cows . .	do. . . . .	13 oz.

I have sent my friend Dr. Anderson  
a sample of my Wheat grown here; and

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those to whom he has shown it said it was the finest they had seen.

My crop is supposed to be thirty bushels per acre; and yet there are persons, pretendedly knowing, who declared that Wheat could not be grown here.

This crop was on very high exposed ground.

I am, SIR,

Your obedient humble Servant,

T. JONES.

*Hafod,*

*September 25, 1801.*

TO MR. CHARLES TAYLOR.

*An*

*An ACCOUNT of TREES planted by  
THOMAS JOHNES, Esq. on Hafod  
Estate.*

PLANTED from October 1797, to October 1798, ten thousand Oaks, from one to two feet high; they were planted betwixt four and five feet asunder, according to the size of the plants: the ground was properly inclosed with a stone wall, five feet high.

Planted, betwixt the first of October, 1797, and the first of May, 1799, twenty-five thousand Ash-trees: they were from one to three feet high, and are planted on ground which could not be ploughed, or otherwise improved to advantage, being on the sides and lower parts of hills, as the upper parts of the hills are always planted with Larches. The trees look well, and make good shoots. From the nearest calculation I can make, I think there are not above five hundred  
of



of them dead; the ground was previously well inclosed, and the Ashes are planted from six to eight feet asunder.

Planted, betwixt October 1797, and 1st May, 1799, four hundred thousand Larch-trees; all of them two years old seedlings, from twelve inches to two feet high: they are at this time looking very healthy, and make good shoots. They are planted upon the tops of the hills where there is a very thin stratum of soil; they were planted about two feet asunder, and the ground inclosed previously with a stone wall. The Larches were all planted in the following manner:—A man with a spade, holding the edge of it towards him, makes a cut about six inches deep, if there is that depth of soil; he then turns the spade the right way, and makes a cut across the end of the other thus  $\perp$ : he then works his spade backwards and forwards three or four times, to loosen the mold for the roots of the plants to grow therein.

A boy

A boy attends, with a bundle of trees, to assist every man: the boy puts one tree in each hole, and presses with his foot the turf hard about the roots, to make the tree stand firm.

Whilst the planter is making another hole, a person who attends the planting goes from one planter to another, to see that every man does his duty; he takes hold of the top of each tree, to see that they are properly planted and firm: they are generally put in so hard, that the top will break before they will pull up. If it be late in the spring season, and dry weather apprehended, I have found it of great service to drench the roots well in the following manner, viz: A hole is dug about two feet diameter, and the same in depth; it is then half-filled with water, and fine mold is added, to make it like thin mud; a man then takes as many trees in both his hands as he can conveniently hold and drench in the mud: having prepared

pared a heap of dry soil near the side of the hole, he alternately draws the roots of the plants through the above mud-hole and the dry soil, and thus the fibres of the roots are prevented from hardening or drying, as they would otherwise do.

Mr. Johnes has a plantation of Larches which were set in April 1796, which were treated in the above manner; and although they had no rain for almost two months after they were planted, I believe that out of eighty thousand thus planted on a very dry hill, not above two hundred of them died. The Larches were planted at two feet asunder, or about ten thousand to the acre. The soil where the Larch, Oak, and Ash-trees have been planted, is chiefly of a red loam, on a slaty rock.

The stone walls which surround the plantations are all kept in proper repair by a man who has a yearly allowance for that purpose. Mr. Johnes also employs

employs a man to go daily round the plantations with a dog, to keep them free from trespass.

All the plantations are in a healthy and flourishing condition at this time.

JAMES TODD, *Gardener.*

*Hafod,*

*December 31, 1801.*

MR. CHARLES TAYLOR.

Certificates from the Reverend Lewis Evans, Minister of Eglwys Newydd, accompanied the above accounts, and confirmed the particulars. He stated that he had lately walked over the different plantations, and found them in a thriving condition. He added, that all the plantations made by Mr. Johnes are on a soil that could not be otherwise cultivated at any moderate expence; that the kingdom in general will soon experience their beneficial effects,

effects, and reap incalculable advantages from them.

By an account received from Mr. Todd, in August, 1802, it is stated that he has measured a good number of Larches planted by Mr. Johnes, on a reddish loam, inclining to sand, in April, 1796, which when planted were from eighteen inches to two feet high; and he finds that they are now in general from ten to thirteen feet high. Some of the last year's shoots measured three feet, eight inches; and the greatest part of them are from two and a half to three feet. He observes that the medium growth of Larches in general, in Mr. Johnes's plantation, is from twenty inches to two feet each year; some years more, and some less.

[A further account of this Gentleman's improvements will be found in the Preface to the present Volume.]

The

THE SILVER MEDAL was this Session presented to JAMES BEECH, Esq. of Shaw, near Cheadle, in Staffordshire, for his Plantations of TIMBER-TREES. The following Accounts and Certificates were received from him.

SIR,

HAVING made sundry improvements in planting and draining, I lay the account before the Society, in hopes of their approbation.

Betwixt June, 1798, and June, 1799, I planted 11,000 Oaks, 9,000 Sycamores, 9,000 Ashes, 17,000 Mountain Ashes, 3,000 Larches, 1,800 Elms, and 18,000 Beeches; making in the whole 52,600 trees. The trees are well fenced by banks, rails, and quickset hedges, and they are all in a healthy state.

I have drained 8,580 roods of land, at 69 roods per acre. The drains were generally made two grafts deep; fine broken

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broken stones were afterwards laid thereon, and over that turf-sod.

I am, SIR,

Your obedient Servant,

JAMES BEECH.

*Cheadle, August 13, 1799.*

To the SECRETARY of the  
Society of Arts, etc.

The above Account was confirmed by the Rev. William Eddowes, Minister, who testified, that the drained land, which was only worth five shillings per acre per annum, is now worth thirty shillings; and that he believes Mr. Beech has planted more Timber-trees than are stated in the account.

SIR,

S I R,

I RECEIVED your letter respecting my application to the Society ; and, in answer thereto, inform you, that the Trees I have planted are as prosperous as possible, and well preserved with very nice quickset hedges growing round the different plantations. My land is very much upon the clay ; it suits all kinds of Trees described in my letter exceedingly well, particularly Oak, which, in older plantations that I have made, shoots near four feet long in one year. Beech seems the least inclinable to answer on this soil. Part of the land was ploughed and thrown up into butts, and part planted in the turf. Those Trees planted on the ploughed ground flourish the most. The whole has been trenched with open drains, to let the wet off where necessary, which is a very material point. I sowed last spring about twelve

O

strike



strike of Acorns, of which I will give you an account in a future letter.

I am, SIR,

Your obedient Servant,

JAMES BEECH.

*Cheadle, October 22, 1800.*

MR. CHARLES TAYLOR.

SIR,

I SOWED in the spring of 1799 about half an acre of land with Acorns. The quantity of Acorns sown were about twelve or thirteen strike. The land is taken from the common, and was previously well fallowed as the cleanest wheat fallow. I compute that at least one hundred and fifty Acorns were sown in a square yard, which makes about three hundred and sixty-three thousand in the whole. They are planted out as they come on in size, the youngest plants being left. I sowed, in the same spring, as many Ash Keys as produced at least fifty thousand plants, which have been thinned

thinned out, and distributed into plantations in the same manner. I also sowed, in the same spring, about fifteen strike of Mountain-Ash Berries. These cannot have produced less than four hundred thousand plants, which have been thinned out in the same manner when they began to injure the smaller plants.

The beds for the Ash and Mountain Ash were dug and made perfectly clean. The Mountain Ash seed did not spring so well as the others, as the birds will not suffer the Berries to ripen sufficiently.

This country is mostly of a stiff soil.

I am, SIR,

Your humble Servant,

JAMES BEECH.

*Cheadle, Dec. 22, 1801.*

MR. CHARLES TAYLOR.

The above Accounts were certified by the Rev. William Eddowes to be a just statement.

The THANKS of the Society were this Session presented to Mr. SPENCER COCHRANE, of Muirfield, near Haddington, in North-Britain, for the following Communication on the CULTIVATION of SPRING WHEAT.

S I R,

**I**T is only a few months since I was informed that the Society of Arts, etc. were anxious to ascertain the advantages which may result from Spring-Wheat; that, in the case of an unfavourable autumn and wet winter, this mode may be practised, and be the happy means of counteracting the bad effects of sowing as formerly, when the land was not in the wished-for state to receive the seed in autumn.

If you judge, Sir, the result of my experience for ten years can be of any use, I beg you will lay the following statement before the Society.

Since

Since the year 1790, I have been accustomed to sow a certain part of my farm with Wheat in the months of February and March, and have always succeeded both in the quantity and quality of the Grain produced; the same kind of Wheat being used by me for both the winter and spring sowings.

I ventured, in the year 1800, to sow forty-one acres of land, Scotch measure, with thirty-eight bolls of Wheat. The whole produce of good Grain was two-hundred and ninety-seven bolls, or seven and a quarter bolls per acre. The time of sowing was from the 24th of February to the 17th of March: the wet autumn and winter prevented me from getting the seed into the ground at the usual time. The whole crop was cut betwixt the 14th and 27th of September.

I remark that Wheat sown in the spring is about ten days later than that which is sown in October.

On a reclaimed marsh of five acres I sowed Wheat, the 17th of February, 1798, and reaped therefrom, the 8th of September the same year, sixty bolls, or thirty quarters, Winchester measure.

I flatter myself the Society will believe that my only motive for furnishing them with this account, is the desire of being useful to my country.

I am, SIR,

Your very obedient Servant,

SPENCER COCHRANE.

*Muirfield, near Haddington,*

*February 25, 1802.*

TO MR. CHARLES TAYLOR.

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